Lloyd's Register

Rules and Regulations for the Classification of Ships, July 2011

Notice No. 6

Effective Date of Latest Amendments:

See page 1

Issue date: April 2012

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RULES AND REGULATIONS FOR THE CLASSIFICATION OF SHIPS, *July 2011*

Notice No. 6

This Notice contains amendments within the following Sections of the *Rules and Regulations for the Classification of Ships, July 2011.* The amendments are effective on the dates shown:

Part	***Chapter***	***Section***	***Effective date***
1	3	1, 2, 3, 6, 7, 8	1 July 2012

It will be noted that the amendments also include corrigenda, which are effective from the date of this Notice.

The *Rules and Regulations for the Classification of Ships, July 2011* are to be read in conjunction with this Notice No. 6. The status of the Rules is now:

Rules for Ships	Effective date:	July 2011
Notice No. 1	Effective date:	1 July 2011
Notice No. 2	Effective date:	1 January 2012 & Corrigendum
Notice No. 3	Effective date:	1 January 2012
Notice No. 4	Effective date:	1 January 2012
Notice No. 5	Effective date:	1 July 2012
Notice No. 6	Effective date:	1 July 2012

Part 1, Chapter 3
Periodical Survey Regulations

Effective date 1 July 2012

■ *Section 1*
General

1.1 Frequency of surveys

1.1.6 In general, the periodical survey requirements contained in Chapter 3 also apply to ships built in accordance with the IACS Common Structural Rules (CSR). Where a requirement does not apply to CSR ships, or where a specific requirement applies only to CSR ships, this will be clearly stated.

1.5 Definitions

1.5.1 An **Oil Tanker** is a sea going self-propelled ship which is constructed generally with integral tanks and is intended primarily to carry oil in bulk and includes ship types such as combination carriers (ore/oil and ore/bulk/oil ships, etc.). Where referred to in this Chapter, it shall also include double hull oil tankers as well as tankers with alternative structural arrangements, e.g. mid-deck designs, except where specified. Single hull oil tankers and combination carriers are not covered by the IACS Common Structural Rules (CSR).

1.5.5 An **Ore Carrier** is a sea going self-propelled ship which is constructed generally with single deck, two longitudinal bulkheads and a double bottom throughout the cargo length area and intended primarily to carry ore cargoes in the centre holds only. Ore carriers are not covered by the IACS Common Structural Rules (CSR).

1.5.15 **Substantial Corrosion** is wastage of individual plates and stiffeners in excess of 75 per cent of allowable margins, but within acceptable limits. For ships built ~~ion~~ in accordance with the Commom Structural Rules (CSR), substantial corrosion is as an extend of corrosion such that the assessment of the corrosion pattern indicates a gauged (or measured) thickness between ~~t_{net}~~ t_{ren} + 0,5 mm and ~~t_{net}~~ t_{ren}. Renewal thickness (t_{ren}) is the minimum allowable thickness, in mm, below which renewal of the structural members is to be carried out.

1.5.19 **Pitting Corrosion**. Pitting corrosion is defined as scattered corrosion spots/areas with local material reductions which are greater than the general corrosion in the surrounding area. Further information on pitting intensity can be found in the LR document *Thickness Measurement and Close-Up Survey Guidance*.

1.5.20 **Edge Corrosion**. Edge corrosion is defined as local corrosion at the free edges of plates, stiffeners, primary support members and around openings. An example of edge corrosion can be found in the LR document *Thickness Measurement and Close-Up Survey Guidance*.

1.5.21 **Grooving Corrosion**. Grooving corrosion is typically local material loss adjacent to weld joints along abutting stiffeners and at stiffener or plate butts or seams. An example of groove corrosion can be found in the LR document *Thickness Measurement and Close-Up Survey Guidance*.

Existing paragraphs 1.5.19 *to* 1.5.23 *have been renumbered* 1.5.22 *to* 1.5.26.

■ *Section 2*
Annual Surveys – Hull and machinery requirements

2.2 Annual Surveys

2.2.29 The Surveyor is to carry out an examination and thickness measurement of structure identified at the previous Special Survey or Intermediate Survey as having substantial corrosion, as defined in 1.5. This requirement does not apply to cargo tanks of oil tankers and chemical tankers. The extent of thickness measurements is to be increased in accordance with the appropriate tables in Sections 5, 6, 7 or 8, as applicable, to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out. For cargo holds and ballast tanks of bulk carriers built in accordance with the IACS Common Structural Rules (CSR), the annual thickness measurement may be dispensed with where a protective coating has been applied in accordance with the coating manufacturer’s requirements and is maintained in good condition.

2.2.33 For **bulk carriers**, in addition to the applicable requirements of 2.2.1 to 2.2.29, the following are to be dealt with, where applicable:

(a) Examination of cargo holds in accordance with Table 3.2.1 is required.

(b) Where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out in accordance with Tables 3.6.5, 3.6.6, 3.6.7, 3.6.8, 3.6.9 and 3.6.10. The survey will not be considered complete until these additional thickness measurements have been carried out.

For cargo holds and ballast tanks of bulk carriers built in accordance with the IACS Common Structural Rules (CSR), the annual thickness measurement may be dispensed with where a protective coating has been applied in accordance with the coating manufacturer’s requirements and is maintained in good condition.

(c) For ships fitted with water level detectors in cargo holds, ballast tanks forward of the collision bulkhead and any dry or void space which extends forward of the foremost cargo hold, an examination and a test, at random, of the water ingress detection systems and of their alarms is to be carried out.

(d) For ships fitted with a means for draining and pumping ballast tanks forward of the collision bulkhead and the bilges of dry spaces, any part of which extends forward of the foremost cargo hold, an examination and a test of the draining and pumping systems, including their controls, is to be carried out.
(e) Examination of bunker and vent piping systems, including ventilators.

Section 3
Intermediate Surveys – Hull and machinery requirements

3.2 Intermediate Surveys

3.2.8 The Surveyor is to carry out an examination and thickness measurement of structure identified at the previous Special Survey as having substantial corrosion, *see also* Sections 5, 6, 7 and 8. In addition, for double hull oil tankers built in accordance with the IACS Common Structural Rules (CSR), the identified substantial corrosion areas are required to be examined and additional thickness measurements are to be carried out in accordance with Tables 3.7.11 to 3.7.15.

3.2.14 For **bulk carriers**, in addition to the applicable requirements of 3.2.1 to 3.2.9, the following are to be dealt with on ships over five years of age:
(a) Examination of holds in accordance with Table 3.3.1.
(b) The thickness measurement requirements of 3.2.8 are to be complied with. In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out in accordance with Tables 3.6.4, 3.6.5, 3.6.6 and 3.6.7. The survey will not be considered complete until these additional thickness measurements have been carried out.
(c) For bulk carriers built in accordance with the IACS Common Structural Rules (CSR), the areas identified with substantial corrosion in cargo holds and ballast tanks may be either:
  (i) protected by coating applied in accordance with the coating manufacturer's requirements and examined at Annual Surveys to confirm the coating in way is still in GOOD condition, or alternatively;
  (ii) subject to thickness measurement at Annual Surveys.
~~(c)~~ (d) Thickness measurement of those areas subject to Close-up Survey, to determine both general and local corrosion levels. The extent of thickness measurement may be specially considered provided the Surveyor is satisfied that there is no structural diminution and the protective coating, where provided, remains in GOOD condition, as defined in 1.5.
~~(d)~~ (e) For ore carriers, in addition to the requirements of 3.2.7, the examination of salt-water ballast tanks is to include the following:
  (i) All web frame rings in one ballast wing tank.
  (ii) One deck transverse in each remaining ballast wing tank.
  (iii) Both transverse bulkheads in one ballast wing tank.
  (iv) One transverse bulkhead in each remaining ballast wing tank.

Section 6
Special Survey – Bulk carriers – Hull requirements

6.2 Documentation

6.2.1 The Owner is to obtain, supply and maintain documentation on board as follows:
(a) A survey file comprising reports of structural surveys, thickness measurement and executive hull summary in accordance with IMO Resolution A.744(18).
(b) Supporting documentation consisting of:
  (i) Main structural plans of cargo holds and ballast tanks (for ships built in accordance with the IACS Common Structural Rules (CSR), these plans are to include for each structural element, both the as-built and the renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for the hold transverse section in all cargo holds).
  (ii) Previous repair history.
  (iii) Cargo and ballast history.
  (iv) Records of inspections by ship's personnel with reference to structural deterioration in general, leakages in bulkheads and piping and the condition of the corrosion prevention systems, if any.
  (v) Any other Information that may help to identify critical structural areas and/or suspect areas requiring inspection.
  (vi) Survey Programme as required by 6.3.

The complete documentation in 6.2.1 is to be readily available for examination by the Surveyor and should be used as a basis for survey.

6.7 Thickness measurement

6.7.1 The minimum requirements for thickness measurements are given in Table 3.6.4, *see also* 5.6. For ships built in accordance with the IACS Common Structural Rules (CSR), the number and locations of measurements are detailed in the LR document *Thickness Measurement and Close-Up Survey Guidance*.

6.7.2 In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out, as applicable, in accordance with Tables 3.6.5, 3.6.6, 3.6.7, 3.6.8, 3.6.9 and 3.6.10 to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out. For bulk carriers built in accordance with the IACS Common Structural Rules (CSR), the areas identified with substantial corrosion may be either:
(a) protected by coating applied in accordance with the coating manufacturer's requirements and examined at Annual Surveys to confirm the coating in way is still in GOOD condition, or alternatively;
(b) subject to thickness measurement at Annual Surveys.

Table 3.6.4 Thickness measurement – Single skin and double skin bulk carriers (*Part only shown*)

NOTES
The requirements in this table apply to both single skin and double skin ships unless stated otherwise.
1. For areas in spaces where coatings are found to be in GOOD condition, as defined in 1.5, the extent of thickness measurement may be specially considered. Prior to any coating or re-coating of cargo holds, scantlings are to be confirmed by thickness measurement with the Surveyor in attendance.
2. Transverse sections should be chosen where the largest reductions are likely to occur, or as revealed by deck plating measurement.
3. Transverse bulkhead complete including stiffening system.
4. For ships assigned the ~~notation~~ notations **ESN Hold No1 and ESN All Holds**, the corrugated part of the aft transverse bulkhead of the forward cargo hold is to be subject to thickness measurement. This is to include each vertical corrugation at its lower and middle level including shedder plates and gusset plates, where applicable.
5. Single skin bulk carriers contracted for construction prior to 1 July 1998 are to undergo a re-assessment of their cargo hold shell frames in accordance with the Provisional Rules for Existing Ships. The number of shell frames to be measured is equivalent to the number of shell frames subject to Close-up survey (*see* Table 3.6.1), with representative measurements to be taken at specific areas for each frame.

6.7.5 For bulk carriers built in accordance with the IACS Common Structural Rules (CSR), the ship's longitudinal strength is to be evaluated by using the thickness of structural members measured, renewed and reinforced, as appropriate, during the Special Surveys carried out after the ship reaches 15 years of age (or during the Special Survey No. 3, if this is carried out before the ship reaches 15 years) in accordance with the criteria for longitudinal strength of the ship's hull girder for CSR bulk carriers specified in Chapter 13 of CSR. For further details refer to the LR document Thickness Measurement and Close-Up Survey Guidance.

■ *Section 7*

Special Survey – Oil tankers (including ore/oil ships and ore/bulk/oil ships) – Hull requirements

7.2 Documentation

7.2.1 The Owner is to obtain, supply and maintain documentation on board as follows:

(a) A survey file comprising reports of structural surveys, thickness measurement and executive hull summary in accordance with IMO Resolution A.744(18).
(b) Supporting documentation consisting of:
  (i) Main structural plans of cargo tanks/cargo holds and ballast tanks (for ships built in accordance with IACS Common Structural Rules (CSR), these plans are to include for each structural element, both the as-built and the renewal thickness. Any thickness for voluntary addition is also to be clearly indicated on the plans. The midship section plan to be supplied on board the ship is to include the minimum allowable hull girder sectional properties for the tank transverse section in all cargo tanks).
  (ii) Previous repair history.
  (iii) Cargo and ballast history.
  (iv) Records of inspections by ship's personnel with reference to structural deterioration in general, leakages in bulkheads and piping and the condition of the corrosion prevention systems, if any.
  (v) Extent of use of inert gas plant and tank cleaning procedures.
  (vi) Any other information that may help to identify critical structural areas and/or suspect areas requiring inspection.
  (vii) Survey Programme as required by 7.3.

The complete documentation in 7.2.1 is to be readily available for examination by the Surveyor and should be used as a basis for survey.

7.7 Thickness measurement

7.7.1 The minimum requirements for thickness measurements are given in Table 3.7.6 (Single and double hull oil tankers, including ore/oil ships and ore/bulk/oil ships), *see also* 5.6. For ships built in accordance with the IACS Common Structural Rules (CSR), the number and locations of measurements are detailed in the LR document *Thickness Measurement and Close-Up Survey Guidance*.

7.7.2 In areas where substantial corrosion, as defined in 1.5, has been noted then additional measurements are to be carried out, as applicable, in accordance with Tables 3.7.7, 3.7.8, 3.7.9, 3.7.10, 3.7.11, 3.7.12, 3.7.13, 3.7.14 and 3.7.15 to determine the full extent of the corrosion pattern. The survey will not be considered complete until these additional thickness measurements have been carried out. For double hull oil tankers built in accordance with the IACS Common Structural Rules (CSR), the identified substantial corrosion areas are required to be examined and additional thickness measurements are to be carried out at Annual and Intermediate Surveys.

■ *Section 8*

Special Survey – Chemical tankers – Hull requirements

8.7 Thickness measurement

Table 3.8.2 Close-up Survey – Single hull chemical tankers (*Part only shown*)

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) One web frame ring in a ballast wing tank, *see* Note 1	(1) All web frame rings in a ballast wing tank or double bottom ballast tank, *see* Note 1	(1) All web frame rings in all ballast tanks, *see* Note 1	(1) As Special Survey III

Table 3.8.3 Close-up Survey – Double hull chemical tankers

Special Survey I (Ships 5 years old)	Special Survey II (Ships 10 years old)	Special Survey III (Ships 15 years old)	Special Survey IV (Ships 20 years old and over)
(1) One web frame ring in a ballast double hull tank, *see* Notes 1 and ~~6~~ 9 (2) One deck transverse in a cargo tank or on deck, *see* Note 2 (3) One transverse bulkhead in a ballast tank, *see* Note ~~4~~ 5 (4) One transverse bulkhead in a cargo wing tank, *see* Note 3 (5) One transverse bulkhead in a cargo centre tank, *see* Notes 3 and ~~5~~ 8	(1) All web frame rings in a ballast wing tank or ballast double hull tank, *see* Notes 1 and ~~6~~ 9 (2) The knuckle area and the upper part (approx. 3 m) of one web frame ring in each remaining ballast tank, *see* Note 6 (3) One deck transverse in two cargo tanks, *see* Note 2 (4) One transverse bulkhead in each ballast tank, *see* Note ~~4~~ 5 (5) One transverse bulkhead in a cargo wing tank, *see* Note 3 (6) One transverse bulkhead in two cargo centre tanks, *see* Notes 3 and ~~5~~ 8	(1) All web frame rings in all ballast tanks, *see* Note 1 (2) All web frame rings in a cargo wing tank, *see* Note ~~1~~ 7 (3) One web frame ring in each remaining cargo tank, *see* Note ~~1~~ 7 (4) All transverse bulkheads – in all cargo and ballast tanks, *see* ~~Note 4~~ 4 and 5	(1) As Special Survey III (2) Additional transverse areas if deemed necessary by the Surveyor

NOTES

1. ~~Complete transverse web frame ring~~ Web frame ring in a ballast tank includes the vertical web in side tank, hopper web in hopper tank, floor in double bottom tank and deck transverse in a double deck tank (where fitted) and adjacent structural members. In peak tanks, a web frame means a complete transverse web frame ring, including adjacent structural members.
2. Deck transverse including adjacent deck structural members (or external structure on deck in way of the tank, where applicable.
3. Transverse bulkhead lower part in cargo tanks, including girder system and adjacent structural members (including longitudinal bulkheads) and internal structure of lower stools, where fitted.
4. Transverse bulkhead complete in cargo tanks, including girder system ~~and adjacent members, and adjacent longitudinal bulkhead structure.~~, adjacent structural members (including longitudinal bulkheads) and internal structure of lower and upper stools, where fitted.
5. Transverse bulkhead complete in ballast tanks, including girder system and adjacent structural members including longitudinal bulkheads, girders in double bottom tanks, inner bottom plating, hopper side, connecting brackets.
6. The knuckle area and the upper part (approximately 3 m), including adjacent structural members. Knuckle area is the area of the web frame around the connections of the sloping hopper plating to the inner hull bulkhead and the inner bottom plating, up to 2 m from the corners both on the bulkhead and the double bottom.
7. Web frame ring in a cargo tank includes deck transverse, longitudinal bulkhead vertical girder and cross ties, where fitted, and adjacent structural members.

~~5~~ 8. Where there are no centre tanks, the transverse bulkheads in wing tanks are to be subject to Close-up Survey.
~~6~~ 9. Double hull tank includes double bottom and side tank even though these tanks may be separate.
~~7~~ 10. Ballast tank includes peak tanks.

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